

AMPLIFIER LINEARIZATION BY PRE-DISTORTING A DECOMPOSED INPUT SIGNAL

ABSTRACT OF THE DISCLOSURE

5 A power amplifier's complex pre-distortion curve is generated by decomposing a representation of an input signal, processing the resulting decomposed signals using analog techniques, and performing signal re-composition. In one implementation, two different halves of a transfer function corresponding to the amplitude characteristics of the amplifier are separately modeled and then combined to generate a control signal used to control a voltage-controlled attenuator that attenuates the input signal, while two different halves of a transfer function corresponding to the amplifier's phase characteristics are
10 separately modeled and then combined to generate a different control signal used to control a voltage-controlled phase shifter that adjusts the phase of the input signal. The resulting output signal corresponds to an amplitude-and-phase pre-distorted signal that can be applied to linearize a corresponding (high power) amplifier.